



SEQUENCE LISTING

<110> UNIVERSITY OF CALIFORNIA, SAN DIEGO
FENICAL, William
JENSEN, Paul R.
MINCER, Tracy J.

<120> MARINE ACTINOMYCETE TAXON FOR DRUG AND FERMENTATION PRODUCT
DISCOVERY

<130> UCSD1630-1

<140> US 09/991,518
<141> 2001-11-16

<150> US 60/249,356
<151> 2000-11-16

<160> 9

<170> PatentIn version 3.3

<210> 1
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 1
agagtttgat cctggctcag 20

<210> 2
<211> 22
<212> DNA
<213> Artificial sequence

<220>
<223> Amplification primer

<400> 2
tacggctacc ttgttacgac tt 22

<210> 3
<211> 1479
<212> DNA
<213> Salinopora sp. CNH643 16S ribosomal RNA gene, partial sequence

<400> 3
agagtttgat cctggctcag gacgaacgct ggcggcgtgc ttaacacatg caagtcgagc 60
ggaaaggccc ttcgggtac tcgagcggcg aacgggtgag taacacgtga gtaacctgcc 120
ccaggcttg ggataacccc gggaaaccgg ggctaatacc ggatatgacc atctgtcgca 180
tggtggtgg tggaaagatt ttttggcttg ggatgggctc gcggcctatc agcttggcgg 240
tggggatg gcctaccaag gcggcgacgg gtagccggcc tgagagggcg accggccaca 300

ctggggactga gacacggccc agactcctac gggaggcagc agtggggaat cttgcacaat 360
gggcggaagc ctgatgcagc gacgcccgt gagggatgac ggccttcggg ttgtaaacct 420
ctttcagcag ggacgaagcg tttgtgacgg tacctgcaga agaagcgccg gccaactacg 480
tgccagcagc cgccgtaaga cgtagggcgc aagcgttgc cggatttatt gggcgtaaag 540
agctcgttagg cggcttgc cgtcgactgt gaaaaccgt ggctcaactg cgggcttgca 600
gtcgatacgg gcaggctaga gttcggttagg ggagactgga attcctggtg tagcggtgaa 660
atgcgcagat atcaggagga acaccggtgg cgaaggcggg tctctggcc gatactgacg 720
ctgaggagcg aaagcgtggg gagcgaacag gattagatac cctggtagtc cacgctgtaa 780
acgttggcg ctaggtgtgg ggggcctctc cggttctctg tgccgcagct aacgcattaa 840
gcgcggcc tggggagtac ggcgcagg ctaaaactca aaggaattga cgggggcccgg 900
cacaagcggc ggagcatgct gattaattcg atgcaacgcg aagaacctta cctgggtttg 960
acatcgccgg aaatcctca gagatgggg gtccttcggg gccggtgaca ggtggtgcatt 1020
ggctgtcgct agctcggtc gtgagatgtt gggtaagtc cgcacacgag cgcaaccctt 1080
gttcgatgtt gccagcgcgt tatggcgaaa actcatcgaa gactgccggg gtcaactcg 1140
aggaaggtgg ggatgacgct aagtcatcat gccccttatg tccagggctt cacgcatgct 1200
acaatggccg gtacagtggg ctgcgataacc gtgaggtgga gcaatccca aaaagccgg 1260
ctcagttcgg atcggggct gcaactcgac cccgtgaagt cggagtcgct agtaatcgca 1320
gatcagcaac gctgcgggtga atacgttccc gggccttgc cacaccgccc gtcacgtcac 1380
gaaagtccgc aacacccgaa gccgggtggcc taacccttgc ggggggagcc gtcgaagggt 1440
qqqctqqcqa ttqqqacqaa qtcgtaacaa ggtagccgt 1479

```
<210> 4
<211> 1479
<212> DNA
<213> Salinospora sp. CNH646 16S ribosomal RNA gene, partial sequence

<400> 4
agagttgtat cctggctcag gacgaacgct ggcggcgtgc ttaacacatg caagtcgagc 60
ggaaaggccc ttcggggta tcgagcggcg aacgggtgag taacacgtga gtaacctgcc 120
ccaggctttg ggataacccc gggaaaccgg ggctaataacc ggatatgacc atctgtcgca 180
tgggtgggtgg tggaaagatt ttttggcttgc gatgggctc gcggcctatc agcttgg 240
tggggtgatg gcctaccaag gcggcgacgg gtagccggcc tgagagggcg accggccaca 300
ctgggactga gacacggccc agactcctac gggaggcagc agtggggat cttgcacaat 360
qqqcqqqaqc ctqatqcaqc qacggcggt gagggatgac ggccttcggg ttgtaaacct 420
```

ctttcagcag ggacgaagcg tttgtgacgg tacctgcaga agaagcgccg gccaaactacg	480
tgccagcagc cgccgtaaga cgtagggcgc aagcgttgtc cggttattt gggcgtaaag	540
agctcgtagg cggcttgcg cgctgactgt gaaaaccgt ggctcaactg cgggcttgca	600
gtcgatacgg gcaggctaga gttcggtagg ggagactgga attcctggtg tagcggtgaa	660
atgcgcagat atcaggagga acaccggtgg cgaaggcggg tctctggcc gatactgacg	720
ctgaggagcg aaagcgtggg gagcgaacag gattagatac cctggtagtc cacgctgtaa	780
acgttggcg ctaggtgtgg ggggcctctc cggttctctg tgcccgagct aacgcattaa	840
gcgcggcc tggggagtac ggccgcaagg ctaaaactca aaggaattga cgggggccccg	900
cacaagcggc ggagcatgcf gattaattcg atgcaacgcf aagaacctta cctgggtttg	960
acatcgccgg aaatccttca gagatggggg gtccttcggg gccggtgaca ggtggtgcat	1020
ggctgtcgct agctcggtc gtgagatgtt gggtaagtc ccgcaacgag cgcaaccctt	1080
gttcgatgtt gccagcgcgt tatggcgggg actcatcgaa gactgccggg gtcactcg	1140
aggaaggtgg ggatgacgac aagtcatcat gcccattatg tccagggctt cacgcatgt	1200
acaatggccg gtacagtggg ctgcgataacc gtgaggtgga gcgaatccca aaaagccggt	1260
ctcagttcgg atcgggtct gcaactcgac cccgtgaagt cggagtcgt agtaatcgca	1320
gatcagcaac gctgcggta atacgttccc gggcattgtt cacaccgccc gtcacgtcac	1380
gaaagtccgc aacacccgaa gccggtgcc taaccctgtt ggggggagcc gtcgaagggt	1440
gggctggcga ttgggacgaa gtcgttaacaa ggtagccgt	1479

<210> 5	
<211> 1479	
<212> DNA	
<213> Salinopora sp. CNH898 16S ribosomal RNA gene, partial sequence	
<400> 5	
agagttttagt cctggcttagt gacgaacgct ggcggcgtgc ttaacacatg caagtcgagc	60
ggaaaggccc ttcgggtac tcgagcggcg aacgggttagt taacacgtga gtaacctgccc	120
ccaggcttttgg gataaaccgg gggaaaccgg ggctaatacc ggatatgact ggctgccgca	180
tggtggttgg tggaaagatt ttttggcttg ggatgggctc gcggcctatc agcttgggttgg	240
tggggtgatg gcctaccaag gcggcgacgg gtagccggcc tgagagggcg accggccaca	300
ctgggactga gacacggccc agactcctac gggaggcagc agtgggaaat cttgcacaat	360
gggcggaaagc ctgatgcagc gacgcccgt gaggatgac ggcattcggg ttgtaaacct	420
ctttcagcag ggacgaagcg tttgtgacgg tacctgcaga agaagcgccg gccaaactacg	480
tgccagcagc cgccgtaaga cgtagggcgc aagcgttgtc cggttattt gggcgtaaag	540

agctcgtagg	cggcttgcg	cgtcgactgt	gaaaacccgt	ggctcaactg	cgggcttgca	600
gtcgatacgg	gcaggctaga	gttcggtagg	ggagactgga	attcctggtg	tagcggtgaa	660
atgcgcagat	atcaggagga	acaccggtgg	cgaaggcggg	tctctgggccc	gatactgacg	720
ctgaggagcg	aaagcgtggg	gagcgaacag	gattagatac	cctggtagtc	cacgctgtaa	780
acgttggcg	ctaggtgtgg	ggagcctctc	cgttctctg	tgccgcagct	aacgcattaa	840
gcgcgcgc	tggggagtac	ggccgcaagg	ctaaaactca	aaggaattga	cgggggccccg	900
cacaaggcgc	ggagcatgcg	gattaattcg	atgcaacgcg	aagaacctta	cctgggtttg	960
acatcgccgg	aaatcctca	gagatggggg	gtccttcggg	gccggtgaca	ggtggtgcat	1020
ggctgtcg	agctcggtc	gtgagatgtt	gggttaagtc	ccgcaacgag	cgcaaccctt	1080
gttcgatgtt	gccagcgcgt	tatggcgggg	actcatcgaa	gactgccggg	gtcaactcgg	1140
aggaagggtgg	ggatgacgtc	aagtcatcat	gccctttagt	tccagggctt	cacgcatgct	1200
acaatggccg	gtacaatggg	ctgcgatacc	gtgaggtgg	gcgaatccca	aaaagccggt	1260
ctcagttcgg	atcggggtct	gcaactcgac	cccgtaagt	cggagtcgct	agtaatcgca	1320
gatcagcaac	gctgcgggtga	atacgttccc	ggccttgt	cacaccgccc	gtcacgtcac	1380
gaaagtgcgc	aacacccgaa	gccggtgcc	taaccctgt	ggggggagcc	gtcgaagggt	1440
gggctggcga	ttgggacgaa	gtcgtaacaa	ggtagccgt			1479

<210>	6					
<211>	1480					
<212>	DNA					
<213>	Salinospora sp. CNH440 16S ribosomal RNA gene, partial sequence					
<400>	6					
agagttttagt	cctggcttag	gacgaacgct	ggcgccgtgc	ttaacacatg	caagtcgagc	60
ggaaaggccc	ttcggggtagc	tcgagcggcg	aacgggttag	taacacgtga	gtaacctgcc	120
ccaggctttg	ggataacccc	ggaaacccgg	ggctaatacc	ggatatgact	ggctgccgca	180
tggtggttgg	tggaaagatt	ttttggcttg	ggatgggctc	gcggcctatc	agcttggttgg	240
tggggtgatg	gcctaccaag	gcggcgacgg	gtagccggcc	tgagagggcg	accggccaca	300
ctgggactga	gacacggccc	agactcctac	gggaggcagc	agtgggaaat	cttgcacaat	360
gggcggaagc	ctgatgcagc	gacgccgcgt	gagggatgac	ggccttcggg	ttgtaaacct	420
ctttcagcag	ggacgaagcg	tttgtgacgg	tacctgcaga	agaagcgccg	gccaaactacg	480
tgccagcagc	cgcgttaaga	cgtagggcgc	aagcggtgtc	cggatttatt	ggcgtaaaag	540
agctcgtagg	cggcttgcg	cgtcgactgt	gaaaacccgt	ggctcaactg	cgggcttgca	600
gtcgatacgg	gcaggctaga	gttcggtagg	ggagactgga	attcctggtg	tagcggtgaa	660

atgcgcagat atcaggagga acaccgggtgg cgaaggcggg tctctgggcc gataactgacg	720
ctgaggagcg aaagcgtggg gagcgaacag gattagatac cctggtagtc cacgctgtaa	780
acgttgggcg ctaggtgtgg ggagcctctc cggttctctg tgccgcagct aacgcattaa	840
gcgcggccgc tggggagtac ggccgcaagg ctaaaactca aaggaattga cgggggccccg	900
cacaagcggc ggagcatgct gattaattcg atgcaacgct aagaacctta cctgggtttg	960
acatcgccgg aaatccttca gagatggggg gtccttcggg gccggtgaca ggtggtgcat	1020
ggctgtcgct agctcgtgtc gtgagatgtt gggtaagtc ccgcaacgag cgcaaccctt	1080
gttcgatgtt gccagcgcgt tatggcgggg actcatcgaa gactgccggg gtcaactcgg	1140
aggaaggtgg gnatgacgta aagtcatcat gccccttatg tccagggctt cacgcatgt	1200
acaatggccg gtacaatggg ctgcgatacc gtgaggtgga gcgaatccca aaaagccggt	1260
ctcagttcgg atcggggtct gcaactcgac cccgtgaagt cggagtcgt agtaatcgca	1320
gatcagcaac gctgcggta atacgttccc gggccttgta cacaccgccc gtcacgtcac	1380
gaaagtccgg aacacccgaa gccggtgcc taaccctgt ggggggagcc gtcgaagggt	1440
gggctggcga ttgggacgaa gtcgtaacaa ggtagccgta	1480

<210> 7	
<211> 1479	
<212> DNA	
<213> Salinopora sp. CNH536 16S ribosomal RNA gene, partial sequence	
 <400> 7	
agagttttagt cctggcttagt gacgaacgct ggcggcgtgc ttaacacatg caagtcgagc	60
ggaaaggccc ttccgggtac tcgagcggcg aacgggttagt taacacgtga gtaacctgcc	120
ccaggctttg ggataacccc gggaaaccgg ggctaatacc ggatatgact ggctgccgca	180
tggtggttgg tggaaagatt ttttggcttg ggatgggctc gcggcctatc agcttgggttgg	240
tggggtgatg gcctaccaag gcggcgacgg gtagccggcc tgagagggcg accggccaca	300
ctgggactga gacacggccc agactcctac gggaggcagc agtggggat cttgcacaat	360
ggcggaaagc ctgatgcagc gacgcccgt gaggatgac ggccttcggg ttgtaaacct	420
ctttcagcag ggacgaagcg tttgtgacgg tacctgcaga agaagcgccg gccaactacg	480
tgccagcagc cgccgtaaga cgtagggcgc aagcgttgc cggatttatt gggcgtaaag	540
agctcgttagg cggcttgcg cgtcgactgt gaaaaccgt ggctcaactg cggccttgc	600
gtcgatacgg gcaggctaga gttcggttagg ggagactgga attcctgggt tagcggtgaa	660
atgcgcagat atcaggagga acaccgggtgg cgaaggcggg tctctgggcc gataactgacg	720
ctgaggagcg aaagcgtggg gagcgaacag gattagatac cctggtagtc cacgctgtaa	780

acgttggcg	ctaggtgtgg	ggagcctctc	cgttctctg	tgccgcagct	aacgcattaa	840
gcgccccgcc	tggggagtac	ggccgcaagg	ctaaaactca	aaggaattga	cgggggccccg	900
cacaagcggc	ggagcatgcg	gattaattcg	atgcaacgcg	aagaacctta	cctgggtttg	960
acatcgccgg	aaatccttca	gagatggggg	gtccttcggg	gccggtgaca	ggtggtgcatt	1020
ggctgtcg	agctcgtgtc	gtgagatgtt	gggttaagtc	ccgcaacgag	cgcaaccctt	1080
ttcgtatgtt	gccagcgcgt	tatggcgggg	actcatcgaa	gactgccggg	gtcaactcgg	1140
aggaaggtgg	ggatgacgac	aagtcatcat	gcccttatg	tccagggctt	cacgcattgt	1200
acaatggccg	gtacaatggg	ctgcgatacc	gtgaggtgg	gcgaatccca	aaaagccggt	1260
ctcagttcgg	atcggggtct	gcaactcgac	cccgtaagt	cggagtcgct	agtaatcgca	1320
gatcagcaac	gctgcggta	atacgttccc	ggccttgt	cacaccgccc	gtcacgtcac	1380
aaaagtcggc	aacacccgaa	gccggtgcc	taacccttgt	ggggggagcc	gtcgaagggt	1440
gggctggcga	ttgggacgaa	gtcgtaacaa	ggtagccgt			1479

<210>	8					
<211>	1479					
<212>	DNA					
<213>	Salinopora sp. CNH725 16S ribosomal RNA gene, partial sequence					
<400>	8					
agagtttgat	cctggctcag	gacgaacgct	ggccgcgtgc	ttaacacatg	caagtcgagc	60
ggaaaggccc	ttcggggtac	tcgagcggcg	aacgggtgag	taacacgtga	gtaacctgcc	120
ccaggctttg	ggataacccc	ggaaaccgg	ggctaatacc	ggatatgacc	atctgtcgca	180
tggtgggtgg	tggaaagatt	ttttggcttg	ggatgggctc	gcccctatc	agttgttgg	240
tgggtgatg	gcctaccaag	gccccgacgg	gtagccggcc	tgagagggcg	accggccaca	300
ctgggactga	gacacggccc	agactcctac	gggaggcagc	agtgggaaat	cttgcacaat	360
ggcggaagc	ctgatgcagc	gacgccgcgt	gagggatgac	ggccttcggg	ttgtaaacct	420
ctttcagcag	ggacgaagcg	tttgtgacgg	tacctgcaga	agaagcgccg	gccaaactacg	480
tgccagcagc	cgcggtaaga	cgtagggcgc	aagcgttgc	cggatttatt	ggcgtaaag	540
agctcgtagg	cggcttgc	cgtcgactgt	gaaaaccgt	ggctcaactg	cggcattgc	600
gtcgatacgg	gcaggctaga	gttcggtagg	ggagactgg	attcctgg	tagcggtgaa	660
atgcgcagat	atcaggagga	acaccggtgg	cgaaggcggg	tctctggcc	gatactgacg	720
ctgaggagcg	aaagcgtggg	gagcgaacag	gattagatac	cctggtagtc	cacgctgtaa	780
acgttggcg	ctaggtgtgg	ggggcctctc	cgttctctg	tgccgcagct	aacgcattaa	840
gcgccccgcc	tggggagtac	ggccgcaagg	ctaaaactca	aaggaattga	cgggggccccg	900

cacaagcggc ggagccatgcg gattaattcg atgcaacgcg aagaacctta cctgggtttgc	960
acatcgccgg aaatccttca gagatggggg gtccttcggg gccggtgaca ggtggtgcat	1020
ggctgtcgcc agctcgtgtc gtgagatgtt gggtaagtc ccgcaacgag cgcaaccctt	1080
gttcgatgtt gccagcgcgt tatggcgggg actcatcgaa gactgccggg gtcaactcgg	1140
aggaaggtgg gnatgacgac aagtcatcat gccccttatg tccagggctt cacgcatgt	1200
acaatggccg gtacagtggg ctgcgataacc gtgaggtgga gcgaatccca aaaagccggt	1260
ctcagttcgg atcggggtct gcaactcgac cccgtgaagt cggagtcgt agtaatcgca	1320
gatcagcaac gctgcggta atacgttccc gggccttgcata cacaccgccc gtcacgtcac	1380
gaaagtgcgc aacacccgaa gccggtgcc taacccttgtt ggggggagcc gtcgaagggt	1440
gggctggcga ttgggacgaa gtcgtaacaa ggtagccgt	1479

<210> 9	
<211> 1479	
<212> DNA	
<213> Salinospora sp. CNH964 16S ribosomal RNA gene, partial sequence	
 <400> 9	
agagttttagt cctggcttagt gacgaacgct ggcggcgtgc ttaacacatg caagtcgagc	60
ggaaaggccc ttccgggtac tcgagcggcg aacgggttagt taacacgtga gtaacctgcc	120
ccaggctttg ggataacccc gggaaaccgg ggctaatacc ggatatgacc atctgtcgca	180
tgggtgggtgg tggaaagatt ttttggcttg ggatgggctc gcccctatc agcttgggtgg	240
tggggtgatg gcctaccaag gcccgcacgg gtagccggcc tgagagggcg accggccaca	300
ctgggactga gacacggccc agactcctac gggaggcagc agtgggaat cttgcacaat	360
gggcggaagc ctgatgcagc gacgcccgt gaggatgac ggccttcggg ttgtaaacct	420
ctttcagcag ggacgaagcg tttgtgacgg tacctgcaga agaagcgccg gccaactacg	480
tgccagcagc cgccgtaaga cgtagggcgc aagcggtgtc cggatttatt gggcgtaaag	540
agctcgtagg cggcttgcgt cgctgactgt gaaaacctgt ggctcaactg cggccttgca	600
gtcgatacgg gcaggctaga gttcggtagg ggagactgga attcctgggt tagcggtgaa	660
atgcgcagat atcaggagga acaccgggtgg cgaaggcggg tctctgggccc gataactgacg	720
ctgaggagcg aaagcggtgg gagcgaacag gattagatac cctggtagtc cacgctgtaa	780
acgttggcg ctaggtgtgg gggccctctc cggttctctg tgccgcagct aacgcattaa	840
gcgcggccccc tggggagtac ggccgcaagg ctaaaactca aaggaattga cggggggcccg	900
cacaagcggc ggagccatgcg gattaattcg atgcaacgcg aagaacctta cctgggtttgc	960
acatcgccgg aaatccttca gagatggggg gtccttcggg gccggtgaca ggtggtgcat	1020

ggctgtcgtc agctcgtgtc gtgagatgtt gggtaagtc ccgcaacgag cgcaaccctt 1080
gttcgatgtt gccagcgcgt tatggcgggg actcatcgaa gactgccggg gtcaactcgg 1140
aggaaggtgg ggatgacgtc aagtcatcat gccccttatg tccagggctt cacgcatgct 1200
acaatggccg gtacagtggg ctgcgatacc gtgaggtgga gcgaatccca aaaagccggt 1260
ctcagttcgg atcgggtct gcaactcgac cccgtgaagt cggagtcgct agtaatcgca 1320
gatcagcaac gctgcggta atacgttccc gggccttcta cacaccgccc gtcacgtcac 1380
gaaagtcggc aacacccgaa gccggtgcc taacccttgt ggggggagcc gtcgaaggta 1440
gggctggcga ttgggacgaa gtcgtaacaa ggtagccgt 1479